In the claims:

1. (Currently Amended) A sealed electron beam source for an imaging tube comprising:

a source housing comprising;

a non-apertured source window forming a sealed structure, that separates a source interior from an external low-pressure cavity, which is at a pressure that is less than the standard atmospheric pressure (1 atm), with said source housing and having a first voltage potential; and

a source electrode having a second voltage potential and generating electrons, said source electrode emitting said electrons through said source window to a target external to said source housing and internal to the imaging tube;

wherein said source window comprises feedthroughs for a coolant to flow therein and absorb heat from said source window.

2. (Previously Presented) A source as in claim 1 further comprising:

a coolant channel housing thermally coupled to and at least partially defined by said source housing comprising;

a coolant channel; and

said coolant flowing therein, said coolant absorbing heat from said source housing.

3. (Canceled)

4. (Original) A source as in claim 1 wherein said source window allows direct electron emission to pass through said source window to said target and prevents indirect electron emission from passing through said source window.

5. (Original) A source as in claim 1 wherein said source electrode comprises at least one of a thermionic tungsten wire coil, a field emitter array, or a photoemitter.

6. (Original) A source as in claim 1 wherein said source electrode is a focusing electrode.

7. (Original) A source as in claim 1 wherein said source electrode has a variable potential.

8. (Original) A source as in claim 1 further comprising a grid coupled between said source electrode and said target, said grid focusing said electrons.

9. (Original) A source as in claim 1 wherein the sealed electron beam source is a complete and separate sub-assembly of an imaging tube.

10. (Previously Presented) An imaging tube comprising:

a rotating target having a third voltage potential and decelerating electrons to generate x-rays within the imaging tube; and

a sealed electron beam source external, separate, and sealed from said target and separating a source interior from a low-pressure cavity containing said rotating target comprising;

a source housing comprising;

a source window having a first voltage potential that is approximately equal to said third voltage potential; and

a source electrode having a second voltage potential and generating said electrons, said source electrode emitting said electrons through said source window to said target.

11. (Canceled)

12. (Previously Presented) An imaging tube as in claim 10 further comprising:

a coolant channel housing thermally coupled to and at least partially defined by said source housing comprising;

a coolant channel; and

a coolant flowing therein, said coolant absorbing heat from said source housing.

13. (Previously Presented) An imaging tube as in claim 10 further comprising:

a frame coupled within the imaging tube;

said low-pressure cavity fluidically coupled between said frame and said target, and at least partially defined by said frame, said target, and said sealed electron beam source;

said low-pressure cavity is at least partially exhausted or filled with a low-pressure gas.

14. (Previously Presented) An imaging tube as in claim 13 wherein said low-pressure gas comprises at least one of a low-Z substance, helium, nitrogen, or argon.

15. (Previously Presented) An imaging tube as in claim 10 wherein said sealed electron beam source is directed at said target at a glancing angle.

16. (Previously Presented) An imaging tube as in claim 10 wherein said source window allows direct electron emission to pass through said source window to said target and prevents indirect electron emission from passing through said source window.

17. (Currently Amended) A method of supplying and directing electrons on a target within an imaging tube comprising:

forming a source housing over a source electrode;

sealing the source housing from an external ~~low-pressure~~vacuum cavity that is within the imaging tube;

forming said ~~low-pressure~~vacuum cavity comprising said source housing and the target;

at least partially filling said ~~low-pressure~~vacuum cavity with a low-pressure gas;

generating and emitting electrons from said source electrode; and

directing said electrons through a source window to the target.

18. (Original) A method as in claim 17 wherein directing said electrons through a source window further comprises:

allowing direct electron emission to pass through said source window; and

preventing indirect electrons from passing through said source window.

19. (Original) A method as in claim 17 further comprising cooling said source housing via a coolant channel housing.

20. (Previously Presented) A method as in claim 17 further comprising utilizing said low-pressure gas to enhance heat transfer between the target and a frame of the imaging tube.

21. (Previously Presented) A source as in claim 1 wherein said first voltage potential is approximately equal to a third voltage potential of said target.

22. (Previously Presented) A source as in claim 8 wherein said grid is coupled within said source housing.

23. (Previously Presented) An imaging tube as in claim 10 further comprising:

a frame;

an x-ray window coupled to said frame; and

a coolant channel housing coupled to said frame and cooling said x-ray window.

24. (Previously Presented) An imaging tube as in claim 23 wherein said source window comprises feedthroughs and said coolant channel housing comprises coolant channels that are fluidically coupled to said feedthroughs.